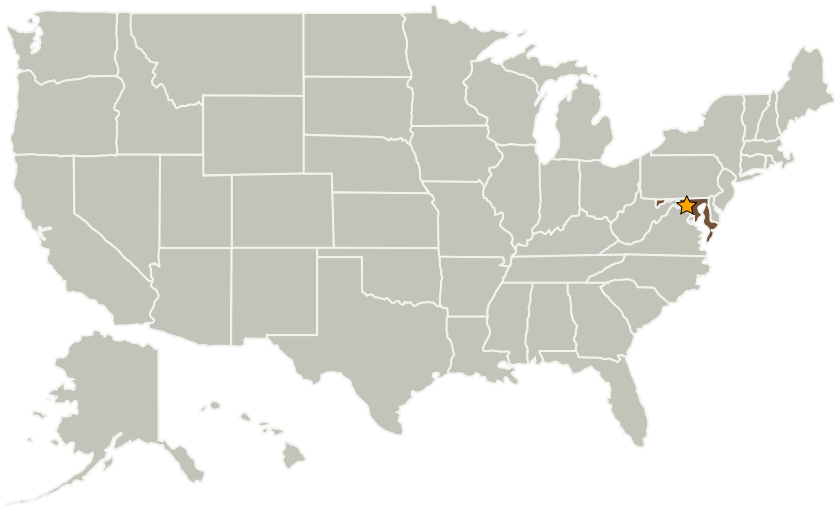
Ultra Compact Cloud Physics Lidar for UAV Platforms, Phase I

Completed Technology Project (2007 - 2008)

Project Introduction

We propose a compact two color, polarization sensitive instrument to measure cloud characteristics from high altitude UAV and can also be widely deployed as inexpensive ground based ceilometers and aerosol finders. The instrument will be modular, can operate with one or two wavelengths, and can measure depolarization or not depending on the need. The instrument is expected to be in two boxes, an optics box and an electronics box, each about half a cubic foot in size. If desired, the two boxes can be attached for a single box solution. Fiber optical technology will be used to minimize critical optical alignments and permit field replacement of the laser and detectors. Micro-optic fiber components will be used to separate the colors before detection.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
Sigma Space Corporation	Supporting Organization	Industry Small Disadvantaged Business (SDB)	Lanham, Maryland

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Maryland

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Niels G Eegholm

Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.5 Lasers